

Amendments to the Specification

Please add the following new heading after paragraph [0021] and above the heading "DETAILED DESCRIPTION OF THE INVENTION":

BRIEF DESCRIPTION OF THE DRAWINGS

Please add under the heading "BRIEF DESCRIPTION OF THE DRAWINGS" the following new paragraph:

[0021.1] FIGS. 1A, 1B, 1C, and 1D are voltage pulse protocols used to assess the potency and kinetics of inhibition of the Na⁺ channels by the compounds as follows: FIG. 1A: IV-curves, FIG. 1C: steady-state inactivation, FIG. 1B: repriming kinetics, and FIG. 1D: time course of binding.

Please replace paragraph [0122] at page 30 through page 32 with the following paragraph:

[0122] The following voltage pulse protocols A, B, C, and D were used to assess the potency and kinetics of inhibition of the Na⁺ channels by the compounds (~~Fig. 1~~ FIGS. 1A-1D).

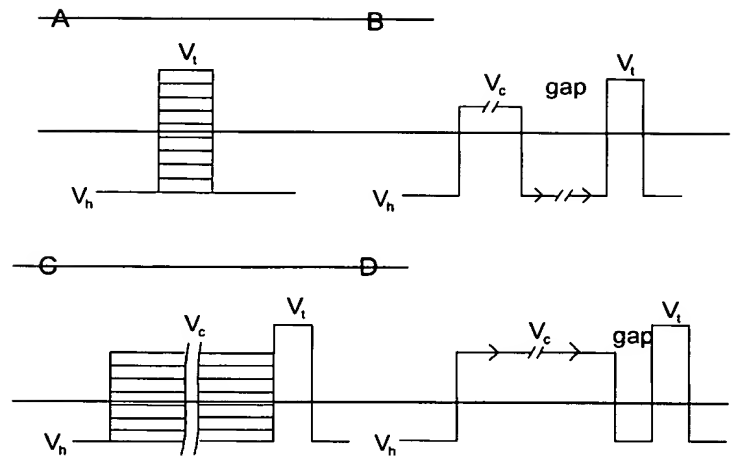


Figure 1. Voltage pulse protocols. A. IV curves. C. Steady-state inactivation. B. Repriming kinetics. D. Time course of binding.

Current-voltage relationship (IV-curve), protocol A (FIG. 1A), was used to report the voltage at which the maximal inward Na^+ current is achieved. This voltage was used throughout the experiment as testing voltage, V_t . The steady-state inactivation (or, availability) curve, protocol C (FIG. 1C), was used to get the voltage at which almost complete ($\geq 95\%$) inactivation of Na^+ channels occurs; it served as voltage for conditioning prepulse, V_c , throughout the experiment. Protocol B (FIG. 1B) reports how fast the channels recover from inactivation at hyperpolarized voltages. This permitted us to set up the duration of the hyperpolarization gap which is used in measurement of the kinetics of binding of compounds to inactivated Na^+ channels (protocol D (FIG. 1D)). Channel repriming under control conditions was fast ($\geq 90\%$ recovery during first 5-10 ms). If a drug substantially retards the repriming process then it becomes possible (protocol D) to accurately measure the kinetics of binding of the inhibitor to inactivated channels as well as the steady-state affinity (k_+ and K_i). To estimate k_+ values the reduction in peak currents in successive trials with varying pre-pulse duration was plotted as a function of pre-pulse duration and the time constant (τ) measured by mono-exponential fit. A plot of $1/\tau$ as a function of antagonist concentration then allowed calculating of the macroscopic binding rates of the antagonists. To determine K_i values the partial inhibition curves measured by fractional responses in steady-state was fitted with the logistic equation:

$$I/I_{\text{control}} = 1/(1 + ([\text{antagonist}]/K_i)^p), \quad \text{Eq. 1}$$

B3 ✓
where I_{control} is the maximal Na^+ current in the absence of antagonist, [antagonist] is the drug concentration, K_i is the concentration of antagonist that produces half maximal inhibition, and p is the slope factor.
